

"Anatomy for Artists"

I THINK perhaps if it were known to Dr. Marshall that his "Anatomy for Artists" is not used in cases where it otherwise would be, because of his decision to omit letters of reference in the illustrations of the bones, he might think it better to alter this in a new edition.

Dr. Marshall admits that his plan may be a strain, but perhaps he does not know how great a strain it is when students are not studying leisurely but in the limited time given in schools of art to an anatomy course. Even if he disapprove of any haste in study, he would surely be sorry to hinder rather than help those who have to be quick.

I heard recently a lecturer on anatomy refer his pupils to books inferior to Dr. Marshall's, regretting, he said, to set aside the best book they could have, but adding that, from the want of reference letters, many of the students would simply be puzzled, discouraged, and confused.

I have only Dr. Marshall's book, and although the illustrations are too good to allow of any great difficulty arising, still I have found the use of it a strain. I doubt, too, if the plan secures a "more accurate knowledge of the forms," as Dr. Marshall hopes it may. Perhaps so, after a little knowledge has been gained, but in the first struggle the student has an uncomfortable haziness as to whether he has found the right groove or prominence upon a bone, which prove it: his forming a definite picture of it in his mind.

Certainly letters spoil the illustrations, but might there not be small key drawings beside the larger more finished ones.

AN ART STUDENT

Meteor

I WAS just now startled by what appeared to be a vivid flash of lightning out of a perfectly cloudless sky, a fluttering flash that lit up everything brilliantly. On turning to the south-east I was just in time to see the broad path of fire that a splendid meteor had left behind it; the meteor was falling behind some trees, and I saw it very imperfectly, but it seemed very large, and indeed *must* have been from its light. I had been looking out from time to time for shooting stars all the evening, and had seen three fine ones and four or five small ones, all in the east, and appearing to come from the neighbourhood of the Bull. The sky is covered with the lovely light that always appears with shooting stars, and which I think is sometimes called homogeneous aurora.

J. M. HAYWARD

Sidmouth, November 4

THE JAVA ERUPTION AND EARTHQUAKE WAVES

FOR the following facts the writer is indebted to the kindness of Herr Emil Metzger, formerly Director of Surveys in the Dutch Government service in Java. His original account, written before September 12, has just appeared in the *Globus*. The present paper is based upon that, but it contains several small additions and corrections which have been received directly from the author. Most of the geographical details here given are based on the Trigonometrical Survey of the coast of Java, which was carried out under Herr Metzger's immediate direction in 1868-69.

A line drawn eastwards from Flat Point (Vlakke Hoeck, Tandjong Blimbing, or Rata), the south-western extremity of Sumatra, would touch the south coast of that island only in two points,—Tandjong Tikus and Tandjong Tūwa, or Varkens Hock. Between these promontories are the bays of Semangka and Lampong.¹ The opposite coast of Java follows generally a north-easterly direction almost to Anjer. Along this stretch it deflects, however, more than once towards the south and the east, and forms Seagull, Welcome, and Pepper Bays. Midway in the channel of the Straits, and on a straight line drawn from Tandjong Tikus (the western side of Lampong Bay), to the western head of Pepper Bay, lies the Island of Krakatoa

(called also Krakatau, Ra'ata), with several smaller islands near it. Sebuk and Sebis are two islands situated between Krakatoa and the south-eastern extremity of Sumatra. About half way between Anjer and Point St. Nicholas, and only separated from the mainland by a narrow belt of water, is the Island of Merak (Pulu Merak). On the opposite mainland were the extensive quarries of Merak, which have now totally disappeared. Further, in the narrowest part of the navigable channel, lay a group of islands, of which the largest, Thwart-Way or Sunghian (Dwars in den Weg), has been rent into five pieces.¹

From the manner in which Sebis (the peak 2818 feet high) and Krakatoa (peak 2700 feet) rose immediately from the waves, and from the great depth of the sea around them, Junghuhn was led to conclude that Sumatra and Java, in spite of the corresponding configuration of their approximating coast-lines, and the fact that they are both volcanic, do not belong to one continuous formation. The Island of Krakatoa, considered by Junghuhn to be a continuation of the mountain system on the adjoining coast of Java, was about five miles long by about three broad; and close at its foot were the two small islands Verlaten and Long, on the west and east respectively. The Trigonometrical Survey of 1868-69 fixed the position of the cone of Krakatoa as 105° 26' E. long, and 6° 8' S. lat. Like most of the islands in the Sunda Straits, Krakatoa was clothed from base to summit with a luxuriant growth of forest and of tropical vegetation. When in the course of the survey the northern face of the mountain was visited in the latter year, several warm springs were found—a common enough thing, however, in these islands. Moreover, Krakatoa, as well as Sebis, was at that time totally uninhabited, being only visited occasionally by the inhabitants of the neighbouring coasts for the sake of the products yielded by the woods.

On May 20 in the present year several shocks, accompanied by loud explosions and hollow, reverberating sounds, were observed at Batavia and Buitenzorg, each about 100 miles distant from Krakatoa. That these phenomena were not seismic was recognised at once; the magnetic needle of the magneto-meteorological observatory showed no deviation, only a trembling motion in a perpendicular direction. A few days later came the news that a volcanic eruption had taken place on the Island of Krakatoa, where nobody had once thought of looking for the seat of the phenomena. The captain of a mail steamer, however, which passed the island at about 6 p.m., has since reported that the needle on his ship was violently agitated, being spun round repeatedly.²

From the deck of another vessel which was passing about eight o'clock on the evening of the 22nd, a dome-shaped mass of vapour, mingled with smoke of a dark gray colour, was seen to rise from the lower part of the island. The first thing noticed was from ten to fifteen dark red "sheaves" of fire flashing up in rapid succession from the base of the column. These were followed by explosions, more or less loud, resembling discharges from artillery, so that the ship, which was sailing at no great distance, distinctly felt their influence. In the upper part of the volume of smoke appeared an uninterrupted series of flashes, differing in no respect from ordinary lightning flashes, except that they were discharged concentrically upon the column from the atmospheric clouds surrounding it. The heat emanating from the locality of the eruption was sensibly felt on the hands and face at a distance of nearly two miles away; the presence of a powerful marsh-gas was also easily detected. Several nautical miles past Krakatoa a thick shower of fine dark-gray sand continued to fall upon the ship for the space of

¹ See the map of the Sunda Straits in this journal, September 6, 1883, p. 444. With this compare the map given in *Globus* (vol. xlv. No. 15, p. 233), where also fuller geographical descriptions may be found than could be given here.

¹ The earliest telegrams spoke of a volcano Sungepan, which had been split into five craters. This appears to have been a mistake; there never was a volcano of this name in this place, nor is there now. It is only an island.

² See the Dutch *Natuur*, September 15, 1883, p. 262.

half an hour. An apparently illimitable cloud of drifting pumice was encountered at a distance of ten miles from the island, and twenty miles farther a second cloud of pumice, which was so thick that a bucket let down into the sea was filled with it before it reached the surface of the water, while the ship, although going at the rate of $10\frac{1}{2}$ knots an hour, cut through the pumice with a noise like that made by a vessel breaking way through thin ice.

A short time afterwards a visit was made to the scene of the eruption by a party from Batavia, and as the account of this visit contains perhaps the latest description of the condition of Krakatoa before the great convulsion of August 26, a few words from it may be perhaps not devoid of interest.

The spectacle as seen from the north of Krakatoa was one calculated to have inspired the pencil of a Doré. From the devastated island a huge, broad pillar of smoke towered upwards as high as the clouds; and while Verlaten Island gladdened the eye with its profuse display of the glories of tropical vegetation, Long Island was completely withered up,—the leafless trees, bent, twisted, and torn, but not scorched, were left standing like naked spectres, as colourless as the soil, or rather enveloped in the same neutral tint of gray, from the pumice dust, as all the rest of the island. Between these two, and only separated from each by a narrow channel, rose, somewhat in the background, the lofty cone of Krakatoa, still covered with green foliage, and without any signs of activity. But in front of the volcano all was wrecked, covered, nay, completely buried, under pumice dust, which, when the sun shone upon it, became of a yellowish-gray colour, while thick masses of condensed vapour, accompanied by incessant fulminations, boiled up from behind the bare and gently sloping dunes. These masses of vapour were for the most part snowy white, others gray, and were closely intertwined, afterwards spreading out in continually widening circles. It was as if a gigantic spectral cauliflower were with incredible rapidity evolving its successive stages of growth before the spectator's eyes. The volumes of vapour were shot out with terrific force in a strictly vertical direction; the atmospheric pressure in the middle of them must have been something fearful. And from time to time immense funnels became visible, leading outwards, and into these many of the incessantly changing unravelled wreaths of smoke were sucked. The rest maintained their original form to a height of several thousand feet; then they slowly drifted eastwards, and, spreading out into mist, discharged their ashes downwards in black streaks like the dark fringes of rain-clouds seen on the horizon. Occasionally the bellowings became louder, and a thicker and larger volume of smoke was vomited forth. Soon afterwards it was noticed that the sky in the west, which was there as bright and clear as it was dark and heavy in the opposite quarter, was being thronged with small, dark bodies,—they were pieces of pumice, of no great gravity, hovering in the air as if upheld by the power of the fiery breath that was streaming upwards. On landing, the party found that they sank up to the ankles in ashes, and accordingly it was necessary to proceed with great caution. As they slowly ascended, the ground and the air both became warmer, the evidences of destruction amongst the trees more conspicuous, and pieces of pumice lay scattered more thickly on the ground. Arrived at a height of about 200 feet above sea level, they found themselves on the edge of a "caldron" of about 700 yards in diameter, probably a former crater. Thence they saw to the north-east the seat of the recent outbreak of May 20, the maximum length of which was about 100 to 110 yards. Here, besides the volumes of vapour and smoke and pumice dust, they also observed sulphur troughs, out of which the mud boiled up in enormous bubbles, which at length burst; and sulphur springs and new but smaller columns of smoke showed themselves in other places. The noise

was terrible; the sound made by the discharge of a rifle was like the snapping of a bonbon in the midst of the hilarity of a banqueting hall. Some of the party ventured to descend a little way into the crater, a few even to step tentatively upon its hot and burning floor. They brought back with them pieces of pumice and lava¹—a kind of black glass—or a piece of sulphur as a memento of the visit. By the time they reached the steamer again darkness had come on, and the spectacle was then one of extraordinary beauty and grandeur. The great column of smoke was still tolerably visible, but the lower part had become a mass of glowing red, from which tongues of yellow flame continued to dart incessantly. At intervals a shower of fine sparks broke out from the cloud, and red-hot stones clove fiery furrows in the air, and fell back at an acute angle to the earth, where they were shattered into a thousand pieces.

That the activity of the mountain was continued during the months of June and July is certain from the report of the Comptroller of Katimbang (on the easternmost promontory of Sumatra), who observed several violent detonations. Also from other places in Sumatra, and particularly from Mexapi ($100^{\circ} 28'$ E. long., $0^{\circ} 20'$ S. lat.), came tidings of volcanic movements; and similar reports arrived from Java.

Then came the outbreak of August 26, surprising, inconceivable, in its terrible effects. Although full and detailed reports are not yet to hand, as indeed from the nature of the circumstances they cannot well be expected to be, for communications are in great measure interrupted, destroyed, and rendered impossible, or those who should have made the reports have either fallen victims to the catastrophe, or have fled—who knows where?—yet sufficient intelligence has reached us to justify an estimate of the number of the victims who have perished at tens of thousands; and as for the amount and extent of the material damage done, it is so great that an approximate calculation even cannot be attempted.

The plain simple facts to which all this is due were the eruption of August 26, and particularly the ocean wave which succeeded it on the following day.² This destructive wave appears to have started from Krakatoa, or its neighbourhood, as a centre, to have dashed with terrific force upon the contiguous coasts of Java and Sumatra, to have proceeded down the Sunda Straits eastwards with a height that reached from 40 to 100 feet in the narrow throat of the pass opposite Anjer, and 17 feet at Batavia, and even to have extended to the western and eastern shores of America, where it was observed on the 27th and 29th respectively. Not to repeat what has been already stated in this journal (vol. xxviii. p. 443), it will be sufficient to add that a few days after the occurrence we learnt in Europe from official telegrams that Tjiringin, Anjer, and the quarries of Merak, as well as the cone of Krakatoa, had disappeared from sight. But further intelligence from Java, of August 28, states that Krakatoa has not entirely disappeared.

Although information respecting the extent of damage and destruction caused on the south coast of Sumatra is still very meagre, it appears that the two bays of Lampong and Semangka have been rendered totally unfit for navigation owing to the immense masses of floating pumice with which they are covered. In Lampong Bay, notwithstanding that it was protected by certain islands, the momentum was so great that at Telok Betong a Government steamer was carried three miles inland. Telok Betong itself, the chief town of the Royal Lampong District, is, with the exception of the resident's house, the fort, and the prison, completely destroyed.

¹ This deserves particular notice. Herr Metzger ascended several of the volcanoes of Java, and often stayed days and weeks together upon them and in their immediate vicinity without ever once finding what was, strictly speaking, lava.

² It is now stated that waves, but of no extraordinary height, were observed at 6 p.m. on August 26.

Fortunately the district as a whole was not very populous. According to the *Royal Almanac* for 1883 there was on an area of nearly 10,100 English square miles a population of 70 Europeans (excluding the military force), 128,939 natives, 255 Chinese, and 154 Arabian and other foreign races. No exact estimate of the loss amongst these has yet reached Europe; all we know is that it has been very great, and the destruction to property not less so. Except the three parallel chains of volcanic origin which stretch from north-west to south-east in the three promontories already mentioned, the country is flat and monotonous, and covered with thick woods. In these are the scattered villages and fields of the native population.

On the opposite coast of Java it is the Residency of Bantam which has borne the full brunt of the wave. We learn that at Tjiringin and Anjer it reached a height of nearly 100 feet. Accordingly all along the coast from Java's First Point to Anjer everything must have perished. And although no accurate or detailed returns of the number of lives lost in this district have yet come in, it may perhaps help us to form some conception of what it will probably amount to if we state that Bantam, on an area of about 3200 square miles, had a population of 350 Europeans, 565,438 natives, 1479 Chinese, and 21 Arabs and others. Between Java's First Point and the country to the south of Tjiringin a range of low hills, by alternately advancing and receding from the coast, formed several small bays and coves, the shores of which were more or less thickly studded with native villages and flourishing tracts of cultivated soil. But these were less frequent in the western part on account of the tigers. On the eastern margin of Pepper Bay, south of Tjiringin, the country was more flat and level, and, preserving this character, extended farther inland. But from Tjiringin to Anjer the mountains approached close to the sea. Along their base ran the chief highway to Anjer, thickly set with prosperous villages, while several others hung on the slopes. Here the full force of the great wave was expended; being broken against the rocky walls, it seems to have swept round them on the north and south and to have completely covered the lower-lying districts about Anjer and Tjiringin. South of Anjer was a bay and small valley running eastwards into the land and bordered by ranges of hills called Kramat Watu, which form the connecting link between the mountain systems to the north and south of this point. The sea is now said to wash the foot of these hills, the invasion having come from the west. It has been already stated that Tjiringin, Anjer, and Merak have disappeared; and all the ground which the inundations have not swept away is now covered with ashes. Tjiringin had six European households, while in Anjer and Merak together there were twenty-two.

Further reports, necessarily imperfect, have come in of the ruin caused by the inundations along the whole extent of the north coast of Java right away to Batavia, and even still farther. Bridges have been swept away, dams broken down, villages swamped, and the cultivated land washed bare by the floods, causing, as everywhere else where they appeared, great losses of life and still greater losses in property. In Tanara alone 700 corpses have been already found. Notwithstanding the facts that the ocean wave, when once it had emerged into the Indian Ocean southwards and into the Java Sea northwards, had more room for expansion, that the Javan coast then formed a kind of angle running back into the land, and that several small islands to the north of Batavia acted as a sort of breakwater, the great wave still possessed such strength that it drove a man-of-war ashore on one of these islands and tore away its floating deck. At Tandjong Priok the sea was observed (unfortunately the time is not given) to rise to a height of more than seven feet above the normal level, and then immediately afterwards to sink ten feet

below that point, thus giving a difference of seventeen feet, while the average difference between ebb and flow is not quite three feet. The water poured in through the narrow opening (410 feet wide) between the inner and outer harbours like a waterfall, and, having filled the basins, flowed out again in the same manner.

According to the accounts received up to the present time, everything to beyond Pandeglang (south of Serang) is covered with ashes, and everything that was in the fields has perished. Very considerable damage has also been done to the lightly constructed bamboo houses by the shower of ashes, so that more than half the population (the north-east portion of the district is by far the most populous) are without means of sustenance, and, what is of far graver consequence, without fodder for their cattle. Appalled by the eruption, and dreading the famine that would soon stare them in the face, they have, it is said, taken to flight, carrying off with them what they could, and leaving their territorial possessions in the lurch. It is probable, however, that this has only been in the first moments of terror, for the native is wont to cling tenaciously to his hereditary soil. It is to be hoped that the Government Commissioner will succeed in furnishing assistance, and that speedily and in no stinted measure, to these especially unfortunate people. For years they have been visited by epidemics, and have suffered great losses from murrains amongst their cattle. Indeed, during the last year alone, the population has fallen off 10 per cent. in numbers; and what makes the case so much the worse is that the Government itself has experienced from this disaster losses in public works and in its extensive coffee plantations which may safely be reckoned in millions.

What, however, was the immediate cause of this ocean wave, whether occasioned by the rising of sixteen new islands (active volcanoes?) between Krakatoa and Sebisi, or by the falling in of the cone of the former island (or whatever be the part of it which has disappeared), or whether both causes have co-operated together, must remain more or less matter for conjecture until we have more authoritative details, based on scientific examination of the scene of the disaster. J. T. BEALBY

Mr. Meldrum contributes to the *Mauritius Mercantile Record* fresh information on the tidal phenomenon of August 27 last, a condensed statement of which may be given here in connection with the above:—

At Cassis, during the whole day, the water was coming and going, but the movement was not taken much notice of till about 1.30 p.m. The tide on that day did not rise as usual. The water came with a swirl round the point of the sea wall, and in about a couple of minutes returned with the same speed. This took place several times. Similar phenomena occurred on the 28th, but to a much smaller extent.

At the St. Brandon Islands on August 27, Capt Rault's vessel was anchored on the west-north-west side of Avocaire Island in 3½ fathoms, a cable's length off shore, when at 3 p.m. the water began to rise 20 feet above the highest point attained by high water. It was then ebb tide. Quickly the water receded with a very rapid motion, leaving everything dry, showing out the shoal patches quite dry, to a very long distance from the island. Before fifteen minutes had elapsed the water rose again with the same velocity for the second time, coming up to the first mark. It was not a wave, nor a billow, nor a high sea; the water was smooth, except where there were heads of coral, and there a few wavelets only were produced. This motion of the water backwards and forwards lasted up to 7 o'clock p.m., the intervals between low water and high water being greater towards the evening; at first the intervals were about ten minutes, and towards six o'clock twenty minutes. The current was setting towards east-north-east of the com-

pass, and the velocity was ten miles an hour. At sunset the sky in the western horizon had a peculiar smoky appearance, which extended nearly to the zenith in an east-south-east direction. On the 28th, at 4 a.m., the same tidal phenomenon took place and lasted up to 7 a.m., but it was less intense, the alternate motions of the sea having only been observed four times. When day dawned on the 28th there was a peculiar crimson colouration from east by north to south-east by east, and the sun after rising showed as if seen through the red shade of a sextant.

At the Seychelles, at 4 p.m. on August 27, the tide came rushing in at the rate of about four miles an hour, and rose two feet. In about half an hour it receded; it returned and receded.

This continued all night and all next day, but the action was quicker and the rise lower. The observations were taken in a channel about twenty-three feet wide, and walled in on both sides. The action continued all day and part of the next day (29th), but not so frequently. At 5 p.m. on the 28th the sun was clear and bright. At sunset there was a lurid glare all over the sky; at 6.30 it was much brighter, and at 6.45 it disappeared. On the 27th the sky was slightly hazy all day. On the morning of the 29th the sun at 7 a.m. was more like a full moon than anything else, and appeared about 70° above the horizon, instead of as usual about 30°. At sunset on the 28th the sun looked as it does through a fog on a frosty day in England.

At Rodrigues, about 1.30 p.m. on the 27th, the sea was all disturbed, resembling water boiling heavily in a pot, swinging the boats which were floating about in all directions. It was then low tide, and most of the boats were aground. This disturbance in the water made its appearance quite suddenly, lasted for about half an hour, and ceased as suddenly as it had commenced. At 2.30 p.m. a similar disturbance commenced again in the inner harbour, and the tide all of a sudden rose to a height of 5 feet 11 inches, with a current of about ten knots an hour to the westward, floating all the boats which were aground, and tearing them from their moorings. All this happened in a very few minutes, and then the tide turned with equal force to the eastward, leaving the boats which were close inshore suddenly dry on the beach, and dragging the Government boat (a large decked pinnace) from heavy moorings, and leaving her dry on the reef. At noon on the 29th the tide was about its usual height and appeared to be settled. The water was very muddy, and not nearly so salt as sea water usually is; it was little more than brackish. Since this singular occurrence took place the sky at north-west has had in the evenings, to as late as 7.15 p.m., a very threatening and strange appearance of a deep purplish red colour.

Tidal disturbances were also observed on the west coast of Réunion, and especially at St. Pierre, on the south-west coast. The maximum amplitude (in height) of this tide was about a metre and a half. The flow took scarcely five minutes to rise, after which the water remained about a minute at rest, and then receded with the same rapidity, to rise again a minute after.

At East London (South Africa) it was not low water on August 27 till 6.29 p.m. At 5.30 p.m. on that day the tide-gauge showed 2 feet 3 inches, and the tide was running in fast. The gauge showed 3 feet 3 inches at 5.38; 1 foot 8 inches at 5.45; 1 foot 3 inches at 5.49; and 2 feet 3 inches at 6.10. Thus, although it was a falling tide, the water suddenly rose 1 foot in 8 minutes, then fell 1 foot 7 inches in 7 minutes, and 5 inches in the next 4 minutes, and then rose 1 foot in 21 minutes. The wind was moderate from east-south-east, and the barometer was 30.40, with dull cloudy weather to south-east. It had been observed during the early part of the afternoon that the tide was oscillating very considerably, and ebbing very fast for neap tides.

On Sunday, August 26, while coming through the Straits of Banca, Capt Strachan, of the s.s. *Anerley*, thought he heard in the forenoon a noise like that of distant cannonading; about noon the noise was more distinct, and it soon attracted the attention of all on board; flashes of light were seen to the south-westward. In the evening an arch of light rose in a short time from the horizon to the zenith. Three aneroid barometers on board rose and fell to the extent of nearly an inch at short intervals. During a part of Monday, the 27th, there was total darkness. Showers of pumice-stone lasted till midnight. The *Anerley* ran back and anchored under the North Watcher Island. While afterwards passing Anjer Point, it was seen that the lighthouse had disappeared, and that great damage had been done.

Capt. Perrot, of the French brig *Brani*, reports that on August 26 to 27, in 1° 39' to 2° 59' S. and 89° 56' to 89° 50' E. of P., constant peals of thunder were heard in the direction of Sumatra, but without any appearance of lightning in that direction. From midnight of the 27th to 11 a.m. of the 28th showers of "very white and very fine sand fell all over the vessel." More sand fell later on in the day and on the 29th. This sand obscured the atmosphere. On August 28, in 8° 20' S., and 92° 04' E., "a great quantity of dust, supposed to be coral dust," fell on board of the *County of Flint*, and a specimen of the dust has been kindly presented by Capt. Rowland, the master of that vessel. On September 9, in 4° 57' S. and 79° 46' E. of P., the French bark *Gipsy*, Capt. Martin, "encountered during the whole day a great bank of floating pumice-stone." On Sunday, August 26, in 0° 32' S., and 105° 57' E., Capt. Knight, of the brig *Airlie* heard, about 3 p.m., explosions, like the sound of heavy artillery, which continued at intervals till about 10 p.m., the last report making the ship tremble all over. Next morning the rigging and deck were covered with fine gray sand like dust.

Mr. Meldrum remarks that there is no doubt that the tidal disturbances observed at Mauritius and elsewhere in the Indian Ocean were due to earthquakes. The origin of the seismic waves was apparently in the Straits of Sunda, and at a very considerable depth below the surface. There were earth-waves, forced sea-waves, and aerial waves. The destruction in Java was caused, apparently, by an immense wave of translation. The extraordinary sunrises and sunsets observed at Mauritius, Rodrigues, and the Seychelles, were probably due to the sun's light passing obliquely through fine volcanic dust floating in the air. It is not improbable that the disturbances of the magnets on August 27 were due to electric currents produced by the action of subterranean forces.

THE LITERATURE OF THE FISHERIES EXHIBITION

FROM the moment of its inauguration, the present Exhibition has been the centre of a ceaseless activity, and we doubt if its streaming thousands of visitors have realised the amount of real work which has gone on in their presence. The results of this, embodied in an extensive literature, are now before the public, and add another testimony to the faultless management of the governing body. The enormity of the fishing interest and the need of reform in certain of its branches, are obvious; and now that the press is speculating upon the "outcome" of this great enterprise, all eyes are turned upon the executive. The extent to which the Exhibition is under State control is in itself a guarantee of success, and we hail with pleasure that same system of descriptive labelling of the exhibits, and the publication of authentic treatises upon or cognate to them, so long characteristic of the adjacent National Museum. By this system the public nets a tangible result—a knowledge of that which